IN THE CLAIMS:

Please amend the claims in the above-identified patent application as follows wherein deleted material is marked with a ~~strikethrough~~ and new material is underlined to show the changes made:

1. **(Currently amended)** A method of extracting electrical characteristics from an integrated circuit layout, said method comprising:

dividing said integrated circuit layout into at least one extraction sub problem;

identifying a set of physical parameters that define said extraction sub problem from said integrated circuit layout;

supplying said set of physical parameters to a machine-learning model trained for said extraction sub problem with Bayesian inference implemented with a Monte Carlo method; and

calculating at least one electrical characteristic for said extraction sub problem by analyzing said set of physical parameters with said machine-learning model trained with Bayesian inference implemented with a Monte Carlo method.

2. **(Original)** The method as claimed in claim 1 wherein said electrical characteristic comprises capacitance.

3. **(Original)** The method as claimed in claim 1 wherein said electrical characteristic comprises resistance.

4. **(Currently amended)** The method as claimed in claim 1 wherein said extraction sub problem comprises a net in said integrated circuit layout.

5. **(Currently amended)** The method as claimed in claim 1 wherein said extraction sub problem comprises a section of interconnect wiring in said integrated circuit layout.

6. **(Currently amended)** The method as claimed in claim 1 wherein one of said set of physical parameters comprises a distance between a pair of interconnect lines in said integrated circuit layout.

7. **(Currently amended)** The method as claimed in claim 1 wherein one of said set of physical parameters comprises ~~a~~ an interconnect wire width in said integrated circuit layout.

8. **(Currently amended)** The method as claimed in claim 1 wherein one of said set of physical parameters comprises ~~a~~ an interconnect wire length in said integrated circuit layout.

9. **(Original)** The method as claimed in claim 1, said method further comprising:

selecting said machine-learning model from a plurality of machine-learning models.

10. **(Currently amended)** The method as claimed in claim 1 wherein calculating at least one electrical characteristic for said extraction sub problem comprises:

determining a capacitance per unit length for a subsection of interconnect wiring in said integrated circuit layout; and

multiplying said capacitance per unit length by a length of said subsection of interconnect wiring in said integrated circuit layout.

11. **(Currently amended)** A computer readable medium, said computer readable medium comprising an arranged set of computer instructions for:

dividing an integrated circuit layout into at least one extraction sub problem;

identifying a set of physical parameters that define said extraction sub problem from said integrated circuit layout;

supplying said set of physical parameters to a machine-learning model trained for said extraction sub problem with Bayesian inference implemented with a Monte Carlo method; and

calculating at least one electrical characteristic for said extraction sub problem by analyzing said set of physical parameters with said machine-learning model trained with Bayesian inference implemented with a Monte Carlo method.

12. **(Original)** The computer readable medium as claimed in claim 11 wherein said electrical characteristic comprises capacitance.

13. **(Original)** The computer readable medium as claimed in claim 11 wherein said electrical characteristic comprises resistance.

14. **(Currently amended)** The computer readable medium as claimed in claim 11 wherein said extraction sub problem comprises a net in said integrated circuit layout.

15. **(Currently amended)** The computer readable medium as claimed in claim 11 wherein said extraction sub problem comprises a section of interconnect wiring in said integrated circuit layout.

16. **(Currently amended)** The computer readable medium as claimed in claim 11 wherein one of said set of physical parameters comprises a distance between a pair of interconnect line in said integrated circuit layout s.

17. **(Currently amended)** The computer readable medium as claimed in claim 11 wherein one of said set of physical parameters comprises ~~a~~ an interconnect wire width in said integrated circuit layout.

18. **(Currently amended)** The method as claimed in claim ~~1~~ 11 wherein one of said set of physical parameters comprises ~~a~~ an interconnect wire length in said integrated circuit layout.

19. **(Currently amended)** The computer readable medium as claimed in claim 11 wherein said arranged set of computer instructions further perform:

selecting said machine-learning model trained for said extraction sub problem model from a plurality of ~~extraction sub problem~~ machine-learning models.

20. **(Currently amended)** The computer readable medium as claimed in claim 11 wherein a subset of computer instructions for calculating at least one electrical characteristic for said extraction sub problem perform the follow:

determining a capacitance per unit length for a subsection of interconnect wiring in said integrated circuit layout; and

multiplying said capacitance per unit length by a length of said subsection of interconnect wiring in said integrated circuit layout.